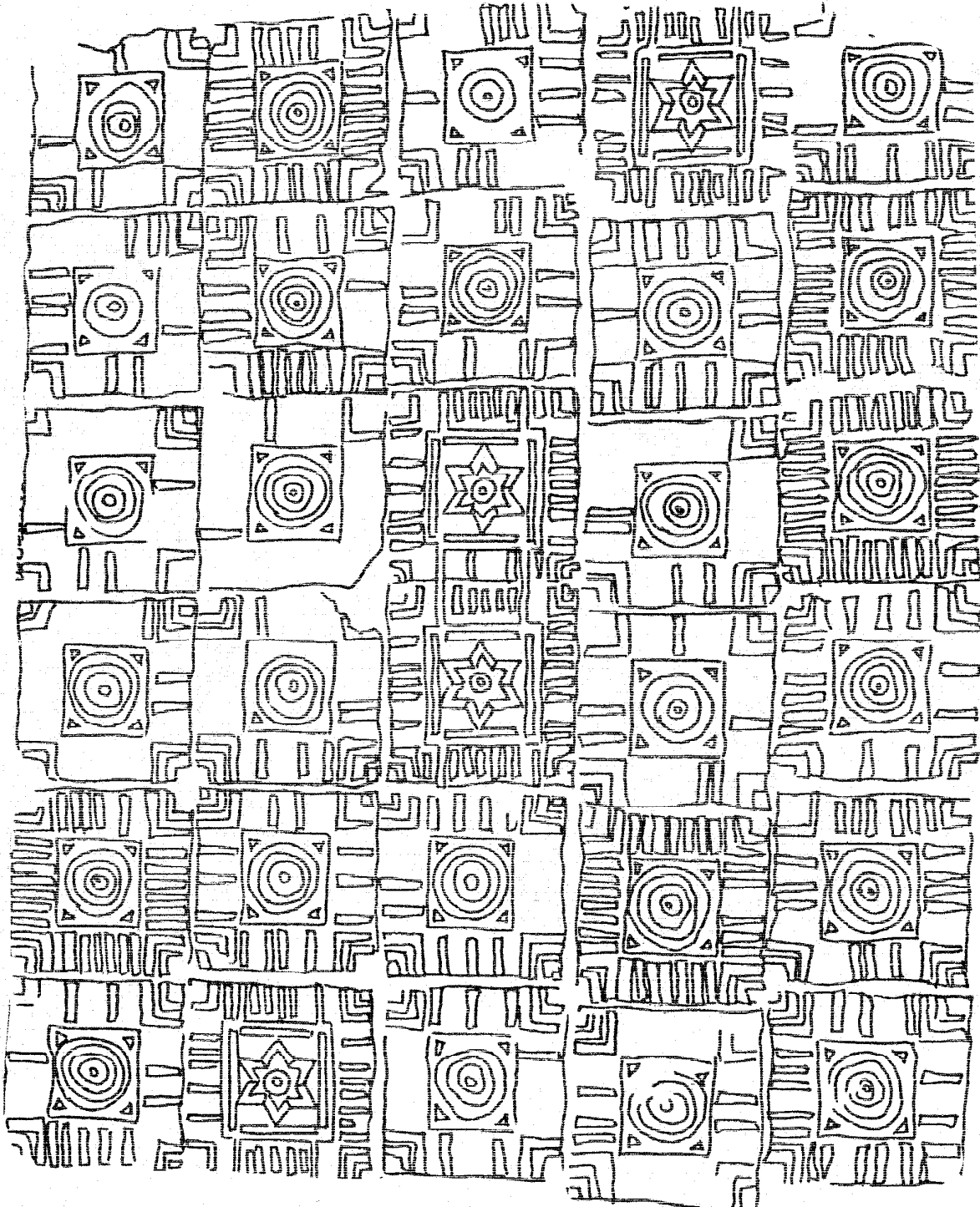

GUIDELINES FOR REHABILITATION



4 REHABILITATION GUIDELINES

The following guidelines for rehabilitation of existing buildings in Lynchburg's four historic districts - Garland Hill, Daniel's Hill, Federal Hill, and Diamond Hill - are based upon The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings. These guidelines have been expanded and refined since their development in 1979. They are used by the National Park Service in determining whether the rehabilitation of a historic building has been undertaken in a way that is sensitive to its historic integrity. The guidelines are very broad by nature since they apply to the rehabilitation of any contributing building in historic districts throughout the United States. They must be followed if the owner is applying for federal rehabilitation tax credits.

The Secretary of the Interior's Standards for Rehabilitation

- | | | |
|--|--|---|
| 1. Every reasonable effort shall be made to provide a compatible use for a property which requires minimal alteration of the building, structure, or site and its environment, or to use a property for its originally intended purpose. | 5. Distinctive stylistic features or examples of skilled craftsmanship which characterize a building, structure, or site shall be treated with sensitivity. | 8. Every reasonable effort shall be made to protect and preserve archeological resources affected by or adjacent to any property. |
| 2. The distinguishing original qualities or character of a building, structure, or site and its environment shall not be destroyed. The removal or alteration of any historic material or distinctive architectural features should be avoided when possible. | 6. Deteriorated architectural features shall be repaired rather than replaced, wherever possible. In the event replacement is necessary, the new material should match the material being replaced in composition, design, color, texture, and other visual qualities. Repair or replacement of missing architectural features should be based on accurate duplications of features, substantiated by historic, physical, or pictorial evidence rather than on conjectural designs or the availability of different architectural elements from other buildings or structures. | 9. Contemporary design for alterations and additions to existing properties shall not be discouraged when such alterations and additions do not destroy significant historical, architectural or cultural material, and such design is compatible with the size, scale, color, material, and character of the property, neighborhood, or environment. |
| 3. All buildings, structures, and sites shall be recognized as products of their own time. Alterations that have no historical basis and which seek to create an earlier appearance shall be discouraged. | 7. The surface cleaning of structures shall be undertaken with the gentlest means possible. Sandblasting and other cleaning methods that will damage the historic building materials shall not be undertaken. | 10. Wherever possible, new additions or alterations to structures shall be done in such a manner that if such additions or alterations were to be removed in the future, the essential form and integrity of the structure would be unimpaired. |
| 4. Changes which may have taken place in the course of time are evidence of the history and development of a building, structure, or site and its environment. These changes may have acquired significance in their own right, and this significance shall be recognized and respected. | | |

HOW TO USE THE GUIDELINES FOR REHABILITATION

The rehabilitation guidelines have been divided into two sections: general guidelines which apply to any aspect of the rehabilitation, and specific guidelines for elements and materials such as roofs, windows, etc. Each specific guideline begins with a discussion of the element and how it is used, followed by a list of typical problems or conditions that may pertain to that element. Next, detailed guidelines are included to determine which rehabilitation steps should be taken to correct problems or determine appropriate design solutions. Following this section is a list of inappropriate actions which are not recommended. For further information, a reference list follows each section, and a glossary of architectural terms and a bibliography are included in the Appendix.

4.1 GENERAL GUIDELINES

IDENTIFICATION

Prior to any work, significant original features, elements, and characteristics should be identified to retain, preserve and maintain them. If necessary, these elements should be repaired, replaced if deteriorated beyond repair, or reconstructed if missing.

MAINTENANCE

Generally, it is better to retain and maintain rather than remove, replace, rebuild, or alter original elements.

Recommended

Retain features that are important for defining the overall historical character of the building, such as:

exterior materials
including wood siding, shingles, stucco, and masonry;

wood features including cornices, brackets, window and doorway surrounds, and the color and finishes of the original;

metal features including cast iron porches and

steps, sheet metal cornice, roofs, roof cresting, window sash, entablatures, columns, capitals, window hoods and hardware and the color and finishes of the original;

roof shape, size, materials and elements including cupolas, cresting, chimneys, and weathervanes, slate, wood, metal, and, color and patterns;

windows including functional and decorative elements such as frames, sash, muntins, glazing, sills, heads, hood molds, panelled or decorated jambs and moldings, shutters and blinds; and

entrances and porches including doors, frames, fanlights, sidelights, porches, steps, balustrades, pilasters, entablatures, columns, and decorative features.

REPAIR

Recommended

- It is generally better to repair than to completely replace an element.
- If an element is damaged, use similar materials that match the original material in type or substitute materials that are physically and chemically compatible and convey the same appearance as the surviving part of the element.

Not Recommended

- Replacing entire elements that can be repaired by replacing or patching parts of them. This action diminishes the historic quality of the building.
- Removing an unrepairable feature and not replacing it, or replacing it with a new feature that does not convey the same visual appearance.

REPLACEMENT AND REMOVAL

Recommended

- Replacement should occur only if the element is deteriorated beyond repair or is completely missing.
- Replace deteriorated or missing elements with new elements constructed of the same material and of the same detail.
- Replace an entire element that is too deteriorated to repair to match the original. If the overall form and detailing are still evident, use the physical evidence to guide the new work.

Not Recommended

- Removing or changing elements important in defining the overall historic and architectural character of the building.
- Removing an entire unrepairable feature and not replacing it, or replacing it with a new feature that does not convey the same visual appearance.
- Removing sound historical material to create a uniform or "improved" appearance.

RECONSTRUCTION AND NEW DESIGN

Recommended

- Use physical evidence to guide fabrication of missing elements. Use materials that match the original or use appropriate substitute materials.
- Base reconstruction of missing elements on historical, pictorial, or physical documentation, or a new design that is compatible with the size, scale, material, and color of the historic building.
- Consider substitute

material if using the same kind of material is not technically or economically feasible.

Not Recommended

- Reconstructing or adding features that are neither original to nor appropriate for the building.
- Creating a false historical appearance.
- Radically changing elements important in defining the architectural or historical appearance of a building.

4.2 MASONRY

For the purposes of these guidelines, masonry includes: brick, stone, terra cotta, concrete, stucco, tile and mortar. Masonry is used on cornices, pediments, lintels, sills, and decorative features as well as for wall surfaces. Color, texture, mortar joints, and patterns of the masonry define the overall character of a building. Masonry structures make up approximately twenty-five percent of the buildings in Lynchburg's four historic districts.

TYPICAL PROBLEMS

Masonry can last for centuries if properly maintained. While masonry is one of the most durable of historic building materials it is also seriously damaged by improper maintenance, by incorrect repair procedures, and by harsh cleaning methods. Some problems may include:

Cracks - Vertical or diagonal cracks may indicate serious problems with the structure. These cracks are often found over windows where there has been movement or wood deterioration.

Loose or sandy mortar - The composition of the mortar has been broken down or the mortar has been washed away by weather.

Missing or spalling masonry - This condition can be caused by trapped moisture in brick where freeze-thaw cycles cause pieces of the brick to expand and pop out.

Damp masonry - This condition results from: leaky roofs, gutters, or downspouts; poor drainage; or a condition known as rising damp. Rising damp occurs when

moisture is drawn up from the ground through brick by capillary action.

Efflorescence - This condition occurs when there is excessive moisture in a masonry wall. As the water evaporates, it leaves salts causing a white haze or efflorescence.

GUIDELINES

MAINTENANCE

Retain masonry features important in defining the overall historic character of the building such as: walls, brackets, railings, cornices, window surrounds, pediments, steps, and columns as well as mortar joint size and tooling, size, texture, and pattern of masonry units and color.

Recommended

- Inspect, evaluate, and monitor the effects of weather on the condition of mortar and the masonry units and insure that improper water drainage is not contributing to deterioration of materials or features.
- Repair leaking roofs, gutters, and downspouts; secure loose flashing.
- Repair cracks; not

only may they be an indication of structural settling or deterioration, they may also allow moisture penetration.

- Caulk the joints between masonry and windows to prevent water penetration.
- Prevent water from gathering at the base of a wall by insuring that the ground slopes away from the wall. If there is excessive

ground water, install drain tiles around the structure.

- Prevent rising damp by applying a damp-proof course just above the ground level with slate or other impervious material. This type of treatment requires the advice of knowledgeable preservation architects or engineers.

Not Recommended

- Applying waterproof, water-repellent, or non-historic coatings in an effort to stop moisture problems; they often just trap moisture inside the masonry causing more problems.

CLEANING

Masonry should be cleaned only when necessary to halt deterioration or remove heavy soiling. Cleaning generally requires knowledgeable cleaning contractors. The Virginia Division of Historic Landmarks keeps a list of qualified cleaning contractors who operate in the state. If someone is hired who is not on this list, investigate their cleaning methods, their materials, and, most importantly, inspect previous work or check references. Look for damage caused by their cleaning such as chipped or pitted brick, washed out mortar, rounded edges of brick, or a residue or film. Whether owners hire professionals or clean the masonry themselves, the following guidelines should be followed.

Recommended

- Clean unpainted masonry with the gentlest means possible. The best method is generally low pressure water wash with detergents.
- If cleaning is necessary, test the cleaner on a small inconspicuous part of the building. Observe the test over a sufficient period of time in order to determine the gentlest cleaning method. Some old bricks are too soft to clean and can be damaged by

detergents and the pressure of the water.

Not Recommended

- Needlessly cleaning masonry in order to attain a 'new' appearance.
- Using abrasive cleaning methods such as sandblasting. These methods remove the hard outer shell of a brick and cause rapid deterioration.
- Cleaning with chemical methods that damage masonry or leave chemical cleaners

on the masonry.

- Cleaning marble or limestone with acid cleaners.
- Using high pressure water wash. Like sandblasting, this technique can actually damage the brick.
- Cleaning with water or water-based chemicals in freezing conditions.

REPAIR: REPOINTING

Repair masonry walls and other masonry features by repointing the mortar joints where there is evidence of deterioration such as: disintegrating mortar, cracks in mortar joints, loose bricks, damp walls, or damaged plasterwork.

Recommended

- Removing deteriorated mortar by carefully hand-raking the joints to avoid damaging the masonry.

- Duplicating mortar in strength, composition, color, and texture. Mortar of older brick buildings like those found in Lynchburg's

historic districts has a high lime and sand content. Replacement mortar should be composed primarily of lime (one part) and

sand (two parts) with some (no more than 20 percent of the lime and cement combined) portland cement (ASTM C-150 Type 1) for workability.

- Duplicating old mortar joints in width and profile. Cut out old mortar to a depth of one inch. Repoint to match original joints and retain the original joint width.

Not Recommended

- Removing mortar with electric saws or hammers.
- Repointing with portland cement, which is stronger than the original lime and sand mortar and the brick itself. Brick expands and contracts with freezing and heating. When this happens, old mortar moves to relieve the

stress. If portland cement is used, the mortar does not give and can cause the brick to crack, break, or spall.

- Repointing with a synthetic caulking compound.
- Using a "scrub" coating technique to repoint instead of traditional repointing.

REPAIR: OTHER

Recommended

- Generally, repairing damaged masonry features by patching, piecing in, or consolidating instead of replacing an entire masonry feature.
- Repairing stucco by removing loose material and patching with a new material that is similar in composition,

color, and texture.

- Patching stone in small areas with a cementitious material. The cementitious mix varies according to the surface being repaired but, like mortar, should be weaker than the masonry being repaired. This type of work should be done

by skilled craftsmen.

- Using apoxies for the repair of broken stone or carved detail. Again, application of such materials should be undertaken by skilled craftsmen.

PAINTING AND WATERPROOFING

Generally, if masonry is unpainted it should remain unpainted. If painted, inspect for necessary repainting and paint with compatible paint coating.

Recommended

- Remove damaged or deteriorated paint only to the next sound layer by hand scraping prior to repainting.
- Clean with a low pressure water wash if the building is dirty.
- Allow masonry to dry out for at least fourteen days before applying paint.
- Prime with an appropriate masonry primer.
- Repaint with an appropriate masonry paint system recommended by a paint manufacturer.
- Use water-repellent

coatings as a last resort only if water penetration problems have not been arrested after repointing and correcting drainage problems.

- Repaint with colors that are historically appropriate to the building and to the district. Generally, brick used in Lynchburg's historic districts has either remained natural brick red or has been painted red over the years.

Not Recommended

- Generally, do not completely remove paint from historically painted masonry. Many times, the paint has adhered strongly to the masonry and breaking that bond can ultimately damage the masonry.
- Removing paint by sandblasting, high pressure water blasting, or caustic solutions. These methods will permanently damage the brick.
- Adding paint, stucco, or waterproofing coatings to masonry without reason.

REFERENCES

The following publications contain more detailed information about masonry. See the Bibliography for their complete citations.

PRESERVATION BRIEF #1 - THE CLEANING AND WATERPROOF COATING OF MASONRY BUILDINGS

PRESERVATION BRIEF #2 - REPOINTING MORTAR JOINTS IN HISTORIC BRICK BUILDINGS

PRESERVATION BRIEF #6 - DANGERS OF ABRASIVE CLEANING TO HISTORIC BUILDINGS

PRESERVATION BRIEF #7 - THE PRESERVATION OF HISTORIC GLAZED ARCHITECTURAL TERRA-COTTA

A GLOSSARY OF HISTORIC MASONRY DETERIORATION PROBLEMS AND PRESERVATION TREATMENTS

RESPECTFUL REHABILITATION - ANSWERS TO YOUR QUESTIONS ABOUT OLD BUILDINGS

MOISTURE PROBLEMS IN HISTORIC MASONRY WALLS - DIAGNOSIS AND TREATMENT

INTRODUCTION TO EARLY AMERICAN MASONRY - STONE, BRICK, MORTAR AND PLASTER

EXTERIOR CLEANING OF HISTORIC MASONRY BUILDINGS

4.3 WOOD

For the purposes of these guidelines, wood includes all wood siding, shingles, decorative wooden elements, and framing. The flexibility of wood has made it the most common building material throughout much of the country's building history. Because it can be easily shaped by sawing, planing, carving, and gouging, wood is used for a broad range of decorative and functional elements such as cornices, brackets, shutters, columns, porches, doors, and windows. Doors and window designs will be discussed under a separate section.

Over fifty percent of the structures in Lynchburg's four historic districts are of frame construction and have wood siding. The remaining dwellings have some wood elements such as frame windows, cornices, decorative elements, and pediments. While wood is relatively inexpensive, durable, and easy to work with, it must be maintained properly to have a long life.

TYPICAL PROBLEMS

Cracked or warped boards - Wood may crack or warp as a result of weather, aging, the way it was originally sawn, or stresses placed upon it.

Cracked, peeling, or blistered paint - Incompatibility of paints, moisture, or improperly prepared surfaces cause these problems.

Rot - These fungi appear where wood has excessive moisture. Typical problem areas are around gutters, downspouts, plumbing, and flashing. Rot can also be present in foundations and unventilated areas.

Pest Infestation - Termites and powder post beetles can cause damage to wood with extremely serious effects, particularly on structural frame members of a building.

GUIDELINES

MAINTENANCE

Inspect, evaluate, and monitor wood surfaces for signs of excessive water, rot, and pest infestation; and keep all surfaces primed and painted in order to prevent wood deterioration from moisture.

Recommended

- Use appropriate poisons with extreme caution and follow all given instructions to eliminate pests.
- Remove vegetation that grows too closely to wood.
- Eliminate excessive moisture problems by repairing leaking roofs, gutters, and downspouts. Secure or replace loose or deteriorated flashing and insure proper ventilation.

- Maintain proper drainage around the foundation to prevent standing water.
- See PAINTING under this section for proper painting procedures.
- Recaulk where rain water might penetrate a building. These areas include junctions of dissimilar materials or construction joints such as siding and corner boards. Remove old caulk and dirt before recaulking

and use a high quality caulk such as one made with polyurethane. Do NOT caulk under individual siding boards or window sills.

PAINTING

Wood on older buildings has generally been painted with oil-based paint; therefore oil paint should be used when repainting. Latex paint will not adhere to chalked oil paint. In addition, it shrinks more during drying than oil paint, and it can pull off the old oil paint underneath. If latex is used, the surface should first be completely primed with an oil-based primer.

Recommended

- Remove dirt with household detergent and water to allow new paint to adhere.
- Remove damaged or deteriorated paint to the next sound layer using the gentlest means possible such as hand sanding and hand scraping.
- Remove all paint down to the bare wood only in extreme cases where the paint has blistered and peeled to the bare wood. This condition may be only in certain places such as sills or porch rails where there is excessive paint

build-up or where moisture is a problem.

- Use electric hot-air guns on decorative wood features and electric heat plates on flat wood surfaces when additional paint removal is required.
- Use chemical strippers to supplement the above technique when more effective removal is required. Be certain to follow directions to thoroughly neutralize chemical strippers after use or new paint will not adhere.

Not Recommended

- Completely removing paint when it is soundly adhered to the wood.
- Completely removing paint to achieve a natural finish.
- Using destructive and dangerous paint removal methods such as a propane or butane torch, sandblasting, or waterblasting.
- Allowing wood to be in contact with chemical strippers too long so that the wood grain is raised or the surface roughened.

REFERENCES

The following publications contain more detailed information about wood. See the Bibliography for their complete citations.

PRESERVATION BRIEF #10 - EXTERIOR PAINT PROBLEMS ON HISTORIC WOODWORK

RESPECTFUL REHABILITATION - ANSWERS TO YOUR QUESTIONS ABOUT OLD BUILDINGS

4.4 ARCHITECTURAL METALS

With the rise of the industrial revolution in the nineteenth century, a variety of new metals began to appear in building construction. Cast iron, steel, pressed tin, copper, aluminum, nickel, bronze, galvanized sheet iron, and zinc were all used at various times for different architectural features. Cast iron porches and steps, sheet metal cornices, roofs, roof cresting, and hardware can be seen in Lynchburg's historic districts, although metal architectural elements are more often found in the city's commercial buildings. Generally, a competent professional should be consulted on the composition and treatment for metals on a building, however, the following guidelines will be useful.

IDENTIFICATION OF MATERIALS

Many decorative elements on mid nineteenth and early twentieth century buildings appear to be wood but are actually metal. Often it will take an expert to identify metals, but the following will help the home owner in this process.

Iron or Steel is easily identified with a magnet.

Zinc is not magnetic, but if paint is peeling, the zinc may have oxidized showing white stains from corrosion.

Copper has a green patina that results from the natural aging of the material.

Other metals should be identified by a knowledgeable professional.

TYPICAL PROBLEMS

Corrosion - Often called oxidation this is the chemical reaction of a metal with oxygen or other materials. The corrosion may be uniform throughout the metal or only at points of stress. Galvanic corrosion is an electrochemical action that can occur between two dissimilar metals that are in contact. Atmospheric corrosion is the most common type of corrosion to

which architectural metals are exposed and is the reaction of metal with moisture and other corrosive agents found in the air. Besides moisture and pollutants, salt and temperature changes can also increase the role of corrosion.

Mechanical Breakdown - Abrasion is the erosion of metal caused by other materials moving

continuously over the metal. Fatigue occurs when metal fails because of too much stress repeatedly applied to it. Fire can cause metal to become plastic and buckle or even melt at high temperatures.

Connection Failure - This situation occurs when bolts, rivets, pins, and welds fail because of overloads, fatigue, or corrosion.

GUIDELINES**MAINTENANCE**

Inspect, evaluate, and monitor metal surfaces for signs of corrosion.

Recommended
• Eliminate excessive moisture problems by repairing leaking roofs, gutters, and downspouts and by securing or

replacing loose or deteriorated flashing.
• Keep surfaces painted that are protected with special finishes.

CLEANING

Recommended

- In general, metal surfaces should be cleaned gently by handscraping or wire brushing to remove loose and peeling paint in preparation for repainting. Paint removal down to the bare metal is not necessary, but removal of all corrosion is an essential step before repainting.
- Cast iron and iron alloys (hard metals) can be

cleaned with a low-pressure, dry grit blasting (80-100 pounds per square inch) if gentle means do not remove old paint properly. Be careful to protect adjacent wood or masonry surfaces from the grit.

- Softer metals such as copper, lead, and tin should NOT be cleaned with grit, but with chemical or thermal methods.

- Immediately after cleaning, apply a rust-inhibiting primer coat of paint.

Not Recommended

- Removing the patina of historic metal when it provides a protective coating and is also a significant historic finish such as on bronze or copper.

PAINTING

Recommended

- Remove all loose and peeling paint and corrosion before repainting.
- Prime the surface with a zinc-based primer or other appropriate rust inhibiting primer and paint with an oil-based paint.

- Apply other protective coatings such as lacquer to protect unpainted metals subject to heavy contact such as door hardware.

REPAIR

Recommended

- Aluminum, fiberglass, or wood can be used to construct missing elements if it is not technically or financially possible to construct in the original material.

Not Recommended

- Placing incompatible metals together such as copper with cast iron, steel, tin, or aluminum without a separation material that will prevent corrosion. This separation can be accom-

plished by using non-porous, neoprene gaskets, or butyl rubber caulking to avoid galvanic corrosion.

REFERENCES

The following publications contain more detailed information about metals. See the Bibliography for their complete citation.

PRESERVATION BRIEF #13 - THE REPAIR AND THERMAL UPGRADING OF HISTORIC STEEL WINDOWS

METALS IN AMERICA'S HISTORIC BUILDINGS - USES AND PRESERVATION TREATMENTS

RESPECTFUL REHABILITATION - ANSWERS TO YOUR QUESTIONS ABOUT OLD BUILDINGS

4.5 SYNTHETIC SIDING

A building's historic character is a combination of its design, age, setting, and materials. In addition to the roof, the exterior walls of a building are perhaps the most visible aspect of a building. Wood clapboards, wood shingles, wood board and batten, brick, stone or a combination of the above play an important role in defining the building's historic appearance.

Throughout the years, many "home improvement" businesses have gone through Lynchburg's various historic neighborhoods and with varying degrees of success have convinced home owners to add new siding materials to their historic residences. Currently, over fifteen percent of the buildings in the four historic districts have had their dominant building material altered by the addition of a new exterior material.

These modern materials have changed over time, but have generally included asbestos, asphalt, vinyl, and aluminum which have been used to artificially create the appearance of brick, stone, shingle, and wood siding surfaces.

TYPICAL PROBLEMS

Historical Authenticity

- Historic buildings with their original historic materials removed or covered over by synthetic modern materials lose the integrity of their original design.

Change in overall appearance

- Depending on the type of original material that is covered by the synthetic siding, a radical change in the appearance of the whole structure is the result. This is true when real wood siding is covered over with vinyl or aluminum siding; these synthetic materials can never have the same patina, texture, or reflective light characteristics of wood.

Loss of historic architectural details

- Many times when synthetic siding is used, original architectural details are removed in order to facilitate the installation

of the new material.

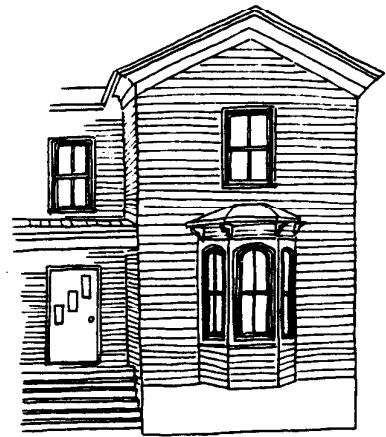
The result is a change in appearance and style of the building and the destruction of historic materials, particularly brackets and "gingerbread" work around porches and eaves of the historic structure. Also the original siding material is damaged when the new material is nailed to it.

Moisture - Without proper vapor barriers and ventilation excessive moisture may build up in the cavity between the original wall and the new material.

Prevention of Inspection - In many cases, synthetic siding installation is applied to buildings in need of maintenance and repair resulting in the covering up of potential problems that may become more serious after they are out of sight.



RECOMMENDED



NOT RECOMMENDED

Vulnerability of the synthetic material - Aluminum scratches and dents easily and vinyl siding may become very brittle and can shatter in very cold weather.

Durability and Cost - Synthetic sidings are normally marketed as being maintenance-free and, therefore, cheaper than traditional building materials even

though initial installation costs of the new siding is often two to three times more expensive than quality painting of the original material. In some cases, it is reported that aluminum siding has chalked and faded as early as five years after installation and had to be repainted. Once the synthetic siding is repainted, it has to be painted just as frequently as wood.

Energy savings - In many cases, synthetic sidings are being promoted as energy saving materials, but they are not good insulators by themselves as they are generally very thin.

GUIDELINES

INSTALLATION AND REMOVAL

Recommended

- If possible, remove synthetic siding and restore original building material.

Not Recommended

- Applying synthetic siding over existing original siding.

REFERENCES

The following publication contains more detailed information about synthetic sidings. See the Bibliography for its complete citation.

PRESERVATION BRIEF # 8 - ALUMINUM AND VINYL SIDINGS ON HISTORIC BUILDINGS

4.6 ROOF AREA

A roof is one of the most important elements in the structure since it serves as the "cover" protecting the rest of the building from the elements. Because it is exposed to the elements more than other parts of the structure, its maintenance is absolutely critical for its own preservation and for the preservation of the rest of the structure. In addition, since the roof is such a large and visible part of the historic building, a change in its shape or material can radically alter the entire structure's overall appearance. In Lynchburg, the original roofs are particularly critical to the integrity of the historic districts since approximately eighty-five percent of the structures in each district have historic slate or standing seam metal roofs.

TYPICAL MATERIALS

Metal - Made of galvanized metal or tin, this material is used extensively in Lynchburg in the form of rolled sheets with standing seams. Tin roofs are always painted.

Slate - One of the most durable roofing materials, slate was often laid in patterns and came in several different colors such as green and red as well as gray.

TYPICAL PROBLEMS

Deterioration
Metals deteriorate from corrosion, fatigue, or pitting and streaking caused by chemical actions. Slate deteriorates from erosion and attack by chemicals in the air and rainwater causing crumbling, breakage, or wear at nail holes. Ice can also cause serious breakage to slate.

Flashing, Gutters, and Downspout Maintenance
The most critical maintenance areas are

the flashing around chimneys, dormers, and cornices and the condition of gutters and downspouts including foundation drainage.

Changing of Roof Materials
The use of modern asphalt shingles as a replacement for a slate or metal roof dramatically alters the historic building's overall appearance and compromises its historic integrity. While slate is initially expensive to

replace, it lasts longer and is, therefore, less expensive in the long term.

Removal of Historic Elements
Original chimneys, chimney pots, cupolas, cresting, finials, and dormers all contribute to the style and historic character of the building as well as to the visual integrity of the roof.

GUIDELINES

MAINTENANCE

Inspect, evaluate, and monitor roof for signs of deterioration of roofing materials, and leaks caused by deteriorated or improperly functioning flashing, gutters, and downspouts.

Recommended
• Clean and maintain gutters and downspouts properly so that water and debris do not collect and cause damage to the roof

fasteners, sheathing, and the underlying structure.
• Repair leaking roofs, gutters, and downspouts. Secure or replace loose or deteriorated flashing. If

aluminum is used for flashing, fasten with aluminum nails and paint.
• Insure proper ventilation to prevent condensation.

- Provide adequate anchorage for the roofing material to guard against wind and water damage.

- Check seams of metal roof and keep metal surfaces painted except for copper roofs which are protected by their own patina.

Not Recommended

- Applying paint or other coatings to roofing material which historically has been unpainted.

REPAIR

Recommended

- Use metal fasteners in metal roofs compatible with the roofing material.
- Repair slate by replacing individual pieces.
- If supporting material has deteriorated under a slate roof, carefully remove and retain slate, repair supports, and reinstall slates. Use copper nails to nail

slates to roof.

- Use high quality flashing material during repair.

Not Recommended

- Using a substitute material for repair that does not convey the same visual appearance as the rest of the roof, such as asphalt shingles on a slate roof.
- Using materials that are physically or chemically incompatible and which would eventually cause deterioration or corrosion.

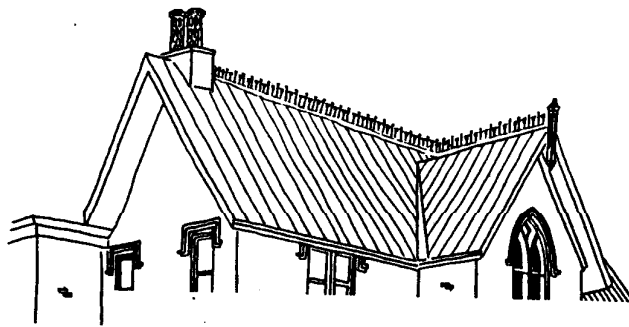
REPLACEMENT AND RECONSTRUCTION

Recommended

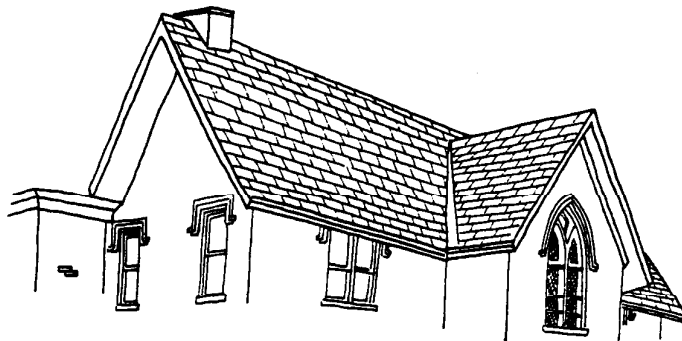
- Substitute material may be used if the same kind of material is not technically or economically feasible; however, slate roofs are expensive to install although top quality slate and flashing will last forty to sixty years with minimum maintenance.

Not Recommended

- Adding new elements to a roof such as dormer windows, vents, or skylights in a manner that diminishes the historic character of the building.
- Adding new roof material when old can be repaired or duplicated.



RECOMMENDED



NOT RECOMMENDED

REFERENCES

The following publications contain more detailed information about roofs. See the Bibliography for their complete citation.

PRESERVATION BRIEF #4 -ROOFING FOR HISTORIC BUILDINGS

**RESPECTFUL REHABILITATION - ANSWERS TO YOUR QUESTIONS
ABOUT OLD BUILDINGS**

4.7 WINDOWS

Windows are one of the most visual aspects of an historic building and help define its particular style. There are numerous types and sizes of windows and their variety increases when they are combined with the different designs of sills, lintels, decorative caps, and shutters. Windows add light to the interior of a building, provide ventilation, and allow a visual link to the outside. Because of the wide variety of architectural styles and periods of construction within all four of Lynchburg's residential historic districts, there is a corresponding variation of styles, types, and sizes of windows as well. Most window frames and sash in these areas are constructed of wood.

COMMON TYPES

Double-hung sash is the most common type of window used in all styles but varies by the number of panes in each sash.

Six-over-six, nine-over-six, six-over-nine are found on Federal and Greek Revival styles or up to the mid-nineteenth century.

They are also found on early twentieth century Colonial Revival style houses. Two-over-two sash are found on Victorian era houses

including Gothic Revival, Italianate, and Queen Anne. One-over-one sash are found on early-twentieth century houses.

Leaded or art glass windows contain patterned designs or depiction of scenes and were popular during the Victorian era and the early twentieth century. They are more often found on more elaborately

designed houses. The windows are often located in transoms or in large compositions in stairwell walls.

Composite windows are groupings of different types of windows such as a double hung sash type flanked by fixed leaded windows and crowned with a transom. They are typical on Victorian and Colonial Revival houses.

TYPICAL PROBLEMS

Maintenance - Most windows in Lynchburg's historic districts are made of wood, while sills, lintels, surrounds, and hoods may be constructed of wood or other materials such as stone or metal. Many of these surfaces are traditionally painted. If paint is allowed to peel, then materials will crack, warp, corrode, or rot. In addition, since most windows are intended to be operable, frequently during painting the movable parts are painted shut.

Inappropriate replacements - Since many windows have

not been maintained properly and since many property owners are concerned about energy conservation, original windows are often replaced by new stock windows that in size, materials, and design do not duplicate the historic fabric of the original. Likewise, storm windows are often installed that do not relate in overall design, color, or materials of the openings they are enclosing.

"Colonialization" of original windows - One particular type of inappropriate window replacement needs to

be mentioned specifically. In a misguided attempt to make a house appear older than it really is or to make it appear to be a "Williamsburg" style, many home owners change the original large paned windows in their houses to small panes or add snap-in muntin bars to create the appearance of small panes. The final inappropriate touch is to add plastic or metal inoperative shutters to create this "instant traditional" look.

GUIDELINES**MAINTENANCE****Recommended**

- Keep painted surfaces well painted.
- Insure that caulk and glazing putty are intact and in good condition.

- Weatherstrip windows.
- Check that all joints are tight and sealed to prevent water infiltration causing deterioration.

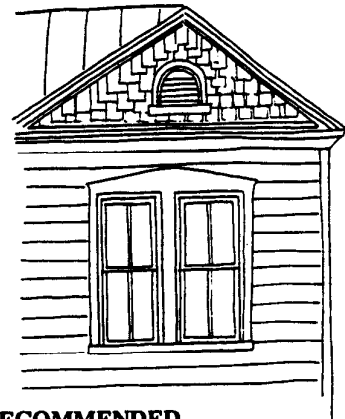
- Insure that water is running off of sills and not forming puddles. The sill should be examined to insure that it slopes away from the building.

REPAIR**Recommended**

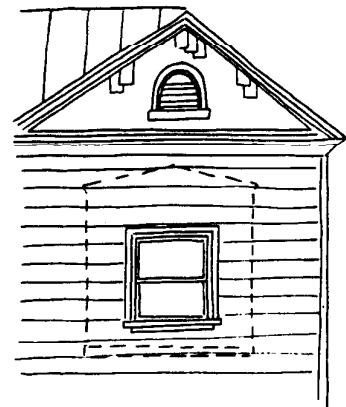
- Repair original windows by patching, splicing, consolidating or otherwise reinforcing. Because of peeling paint or separation of joints, wood can appear to be in bad condition but in fact is sound and can be repaired.
- Prior to repairs, check wood with an ice pick for soundness by jabbing the pick into a wetted wood surface at an angle and pry up a small section. Sound

wood will separate in long fibrous splinters, decayed wood in short irregular pieces. Or insert the ice pick perpendicular to the wood. If it penetrates less than 1/8th inch, it is solid; if more than 1/2 inch it may have dry rot. However, parts can be repaired and complete replacement may not be necessary.

- Reuse serviceable window hardware and locks.

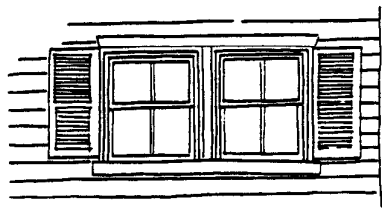
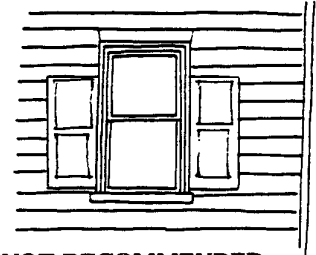
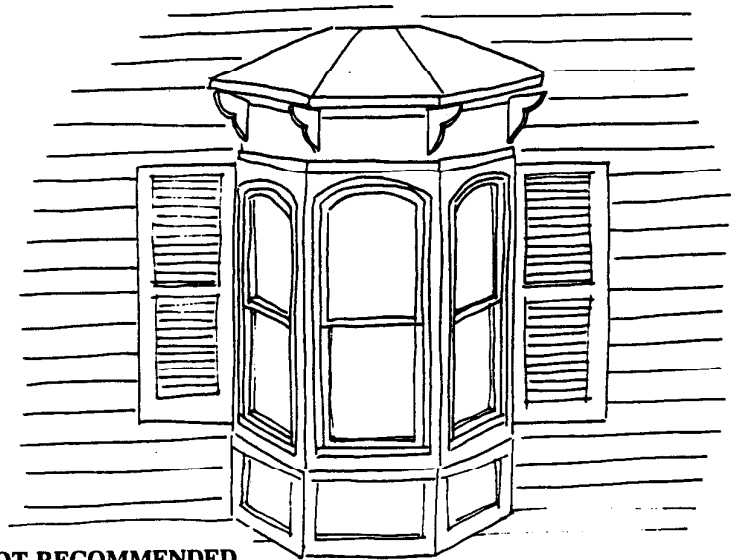
**RECOMMENDED****REPLACEMENT AND RECONSTRUCTION****Not Recommended**

- Changing the number, location, size or glazing pattern of windows by cutting new openings, blocking in windows, or installing replacement sash that does not fit the historic window opening.
- Changing the historic and architectural appearance of windows by using inappropriate materials or finishes which radically change the sash, depth of reveal, and muntin configuration, the reflective quality or color of the glazing or the appearance of the frame.

**NOT RECOMMENDED****NOT RECOMMENDED**

**Not Recommended
(cont.)**

- Adding sash that are not appropriate for the period or style of the building.
- Adding shutters that are the wrong size, type or materials such as vinyl or adding shutters to windows where they were not intended.

**RECOMMENDED****NOT RECOMMENDED****NOT RECOMMENDED****NOT RECOMMENDED****ENERGY RETROFITTING****Recommended**

- Improve thermal efficiency with weatherstripping, storm windows, caulking, interior shades, and, if appropriate for the building, blinds and awnings.
- Install interior storm windows with air-tight gaskets, ventilating holes, and/or removable clips to insure proper maintenance and avoid condensation damage to historic windows.

- Install exterior storm windows which do not damage or obscure the windows and frames.
- Use lightly tinted glazing on non-character defining elevations and only after other alternatives above are carried out.

Not Recommended

- Using aluminum colored storm sash (it can be painted an appropriate color if it is first primed with a zinc chromate primer.)
- Replacing historic multi-paned sash with new thermal sash utilizing false muntins.
- Replacing windows or transoms with fixed thermal glazing or permitting windows and transoms to become inoperative.

REFERENCES

The following publications contain more detailed information about windows. See the Bibliography for their complete citation.

PRESERVATION BRIEF #3 - CONSERVING ENERGY IN HISTORIC BUILDINGS

PRESERVATION BRIEF #9 - THE REPAIR OF HISTORIC WOODEN WINDOWS

PRESERVATION BRIEF #10 - EXTERIOR PAINT PROBLEMS ON HISTORIC WOODWORK

PRESERVATION BRIEF #13 - THE REPAIR AND THERMAL UPGRADING OF HISTORIC STEEL WINDOWS.

RESPECTFUL REHABILITATION - ANSWERS TO YOUR QUESTIONS ABOUT OLD BUILDINGS

4.8 ENTRANCES AND PORCHES

Entrances and porches are often the primary focal points of an historic structure's facade and, because of their rich decoration, help define the style of the building. Entrances are functional and ceremonial for buildings. Porches have traditionally been a social gathering point as well as a transition area between the exterior and interior of the residence. In Lynchburg's four historic districts almost ninety percent of all structures retain either large front or front and side porches. This finding makes retention of porches critical to maintaining not only the integrity of the historic building's original design but of the district as a whole.

COMMON TYPES

Full-width one story porches are the most common in the districts. Columns and decorative details vary according to style and will either be classically inspired or display the ornate sawn and carved details of Victorian styles.

Side porches found on Victorian houses are extensions of the front porch that wrap around the house. Some Colonial Revival houses have side porches and do not have a front porch.

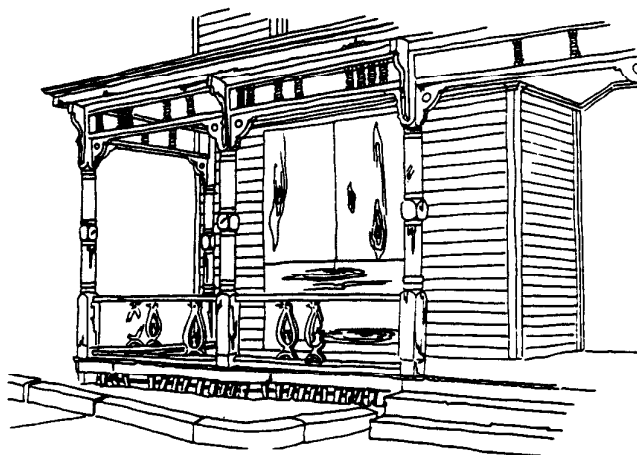
Porticoes are found on several fine examples of Colonial Revival houses and are identified by their columns and classical details. They extend over the entrance or they can be the full height of the structure.

TYPICAL PROBLEMS

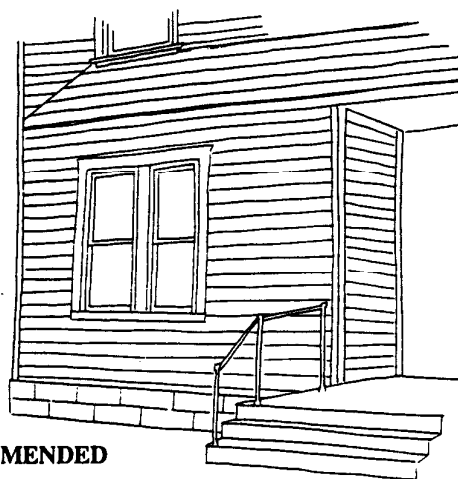
Lack of Maintenance - Decorative details of entrances and porches are often exposed to the elements and are the first such details to be removed when they deteriorate from lack of maintenance.

Porch Removal - As a result of lack of maintenance or change of architectural fashion, the porch may have been completely removed. This action often results in a complete alteration of the building's historic appearance and may compromise the design integrity of the entire block in which the structure is located.

Inappropriate Replacement - Often the design and materials of historic doors are difficult to duplicate and owners sub-

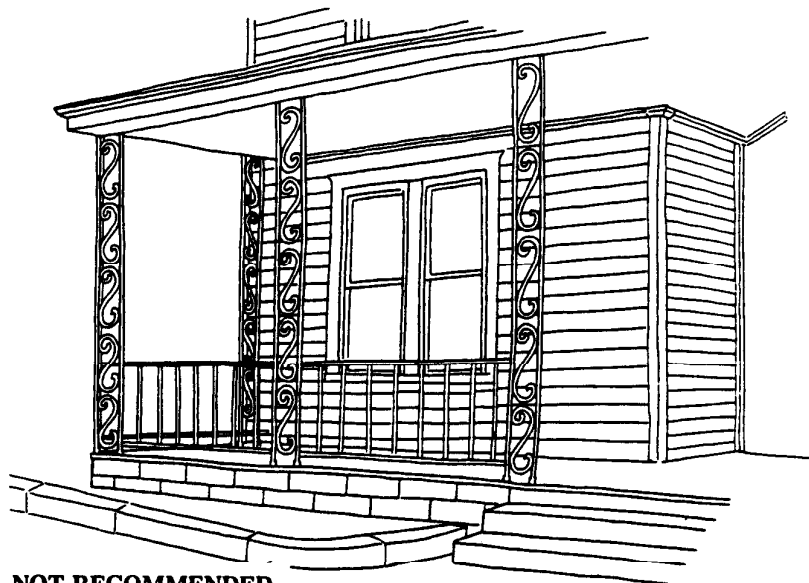


NOT RECOMMENDED

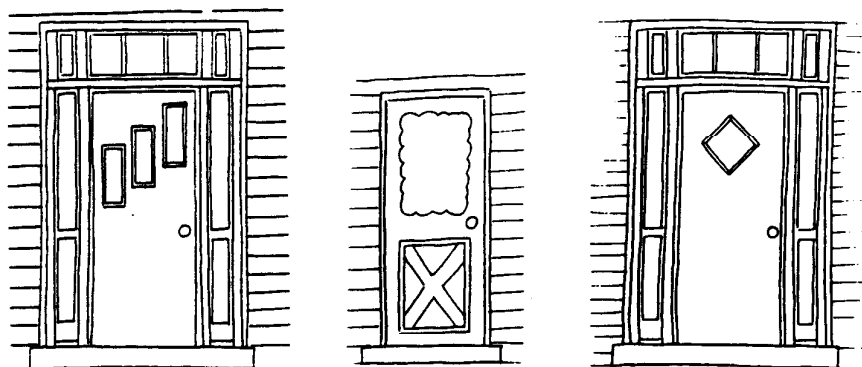


NOT RECOMMENDED

stitute the original doors with stock items from building supply companies whose doors are more appropriate for new suburban dwellings than historic houses. Similarly, many owners add "Williamsburg Colonial" decorative elements such as broken pediments, columns, and pilasters around their entrances compromising the original design. Porches may also receive inappropriate "Colonial" columns or suburban wrought iron supports when the original porch supports deteriorate.



NOT RECOMMENDED



NOT RECOMMENDED

GUIDELINES

MAINTENANCE

Inspect, evaluate, and monitor masonry, wood and metal of porches and entrances for signs of rust, peeling paint, wood deterioration, open joints around frames, sound putty, and adequate caulking.

Recommended

- Keep painted surfaces well painted.
- Insure that caulk and glazing putty are intact and in good condition.
- Weatherstrip doors.
- Check that all joints are

tight and sealed to prevent water infiltration causing deterioration.

- Insure that water is not forming puddles on porch or entrance surfaces causing deterioration.

REPAIR

Recommended

- Reuse hardware and locks that are original or important to the historical evolution of the building.

Not Recommended

- Replacing an entire porch where repair and limited replacement is appropriate.

REMOVAL, REPLACEMENT, RECONSTRUCTION**Recommended**

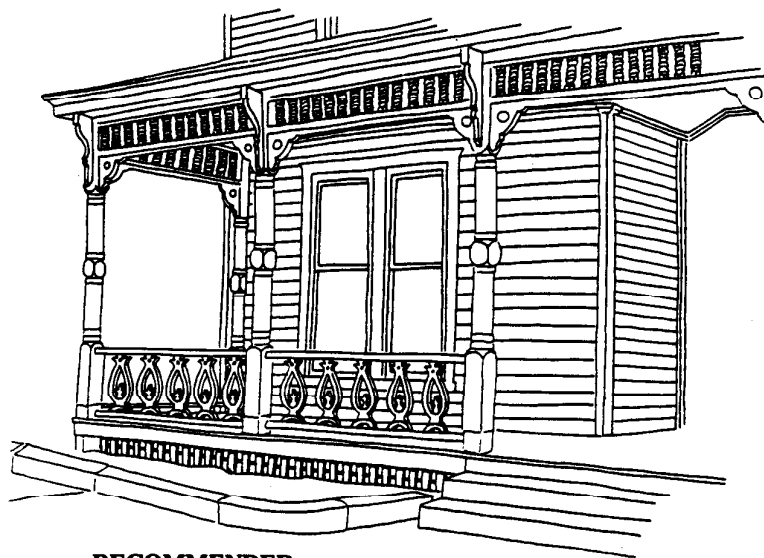
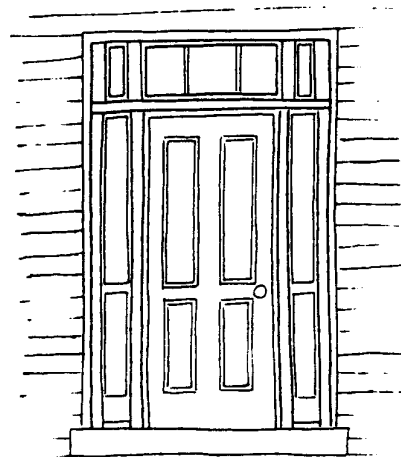
- Replace an entire porch to match original if it is too deteriorated to repair or is completely missing.

Not Recommended

- Removing or radically changing entrances and porches important in defining the overall building's historic character. Obviously, character-defining front and side porches should be given more importance than utilitarian back porches.
- Stripping entrances and porches of historic material.
- Removing an entrance or porch because the building has been re-oriented to

accommodate a new use.

- Cutting a new entrance on a primary elevation.
- Altering an entrance to give an appearance that was not originally intended such as adding sidelights and fanlights on a utilitarian entrance.
- Enclosing porches for energy conservation, thereby changing the historic character, such as by using solid materials instead of large sheet glass behind decorative elements.

**RECOMMENDED****RECOMMENDED****REFERENCES**

The following publications contain more detailed information about entrances and porches. See the Bibliography for their complete citation.

PRESERVATION BRIEF #3 - CONSERVING ENERGY IN HISTORIC BUILDINGS

PRESERVATION BRIEF #10 - EXTERIOR PAINT PROBLEMS ON HISTORIC WOODWORK

RESPECTFUL REHABILITATION - ANSWERS TO YOUR QUESTIONS ABOUT OLD BUILDINGS

4.9 NEW ADDITIONS

New additions should be designed and constructed so that the character-defining features of the historic building are not radically changed, obscured, damaged, or destroyed in the process of rehabilitation. New design should always be clearly differentiated so that the addition does not appear to be an original part of the historic building. The new design may complement the original historic building but the new addition should not be an exact copy of the original design.

Recommended

- Attempt to accommodate needed functions within the existing structure without building an addition.
- Attempt to locate the addition on the rear, inconspicuous side or secondary facade of the building.
- Limit the size so it does not overwhelm the historic building.
- Respect the scale, massing, materials, and window spacing of the historic building but do not attempt to duplicate form, material, and style so that the work appears to be part of the historic building.
- Respect the existing character of surrounding buildings in the district and insure that the new addition will complement their design.
- Place new additions such as balconies, decks, exterior stairs and greenhouses on non-character defining elevations such as the rear or inconspicuous sides of the building.
- Use contemporary designs for new work or reference design motifs from the historic building.

Not Recommended

- Copying an historical style or period when planning new additions.
- Using the same wall plane, roof line, cornice height, and materials that make the addition appear original to the historic building.



NOT RECOMMENDED



NOT RECOMMENDED

REFERENCES

The following publications contain more detailed information about new additions to historic buildings. See the Bibliography for their complete citation.

PRESERVATION BRIEF #14-NEW EXTERIOR ADDITIONS TO HISTORIC BUILDINGS: PRESERVATION CONCERNS

**ARCHITECTURE IN CONTEXT, FITTING NEW BUILDINGS WITH OLD
OLD AND NEW ARCHITECTURE, DESIGN RELATIONSHIP**

4.10 MODERN CONVENIENCES AND CODE REQUIREMENTS

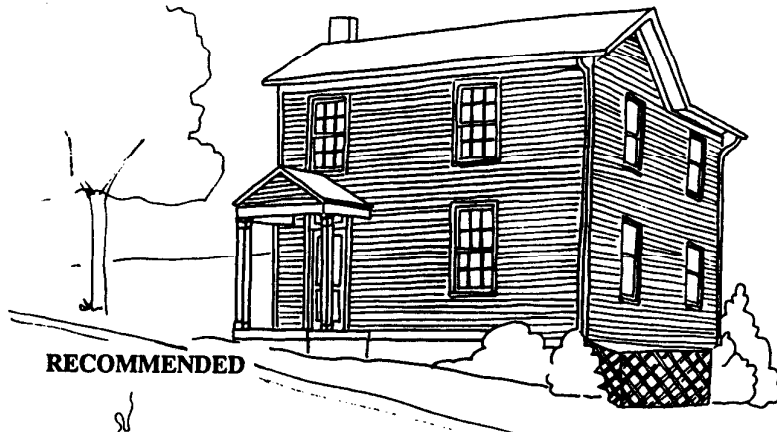
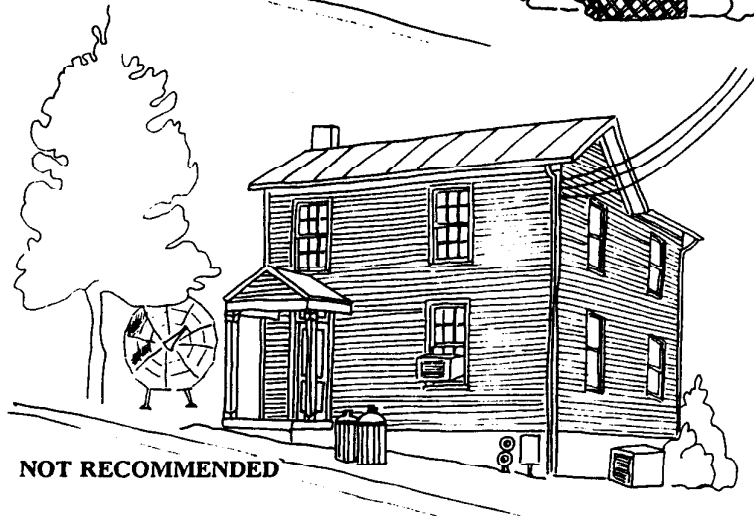
Careful consideration should be given to placement and design of modern conveniences and to changes required by code on and around historic buildings. Such items include: roof antennae, dish antennae, external heating and air conditioning units, utility meters, trash container storage, utility wires, solar collectors, and ramps for the handicapped.

Recommended

- Retain plant materials, trees, and landscape features performing passive solar energy functions such as sun shading and wind breaks.
- Install freestanding solar collectors and dish antennae in an inconspicuous manner so as not to detract from the property's character-defining features.
- Screen trash containers, external heating and air conditioning units, and utility meters with landscaping or a screen constructed to blend with the building.
- Place solar collectors on non-character defining roofs or roofs of nonhistoric adjacent buildings.
- Provide barrier-free access through removable or portable, rather than permanent ramps that may alter features of the historic building.
- Comply with all health and safety codes in such a manner that character-defining features and finishes are least affected.

Not Recommended

- Placing solar collectors, dish antennae, or other modern conveniences on conspicuous roof areas or in the primary street front areas as to detract from the building and the district as a whole.

**RECOMMENDED****NOT RECOMMENDED****REFERENCES**

The following publication contains more detailed information about building codes used in Virginia and Section 513 provides relief for historic buildings from parts of the code under certain conditions. See the Bibliography for the complete citation of publication or visit the City of Lynchburg's Inspections Division to view a copy of this publication.

The BOCA Basic National Building Code/1984

4.11 PAINTING AND COLOR SELECTION

Please see "Exterior Building Materials" for guidelines on painting. Generally, the following guidelines should be followed for painting.

PREPARATION

Recommended

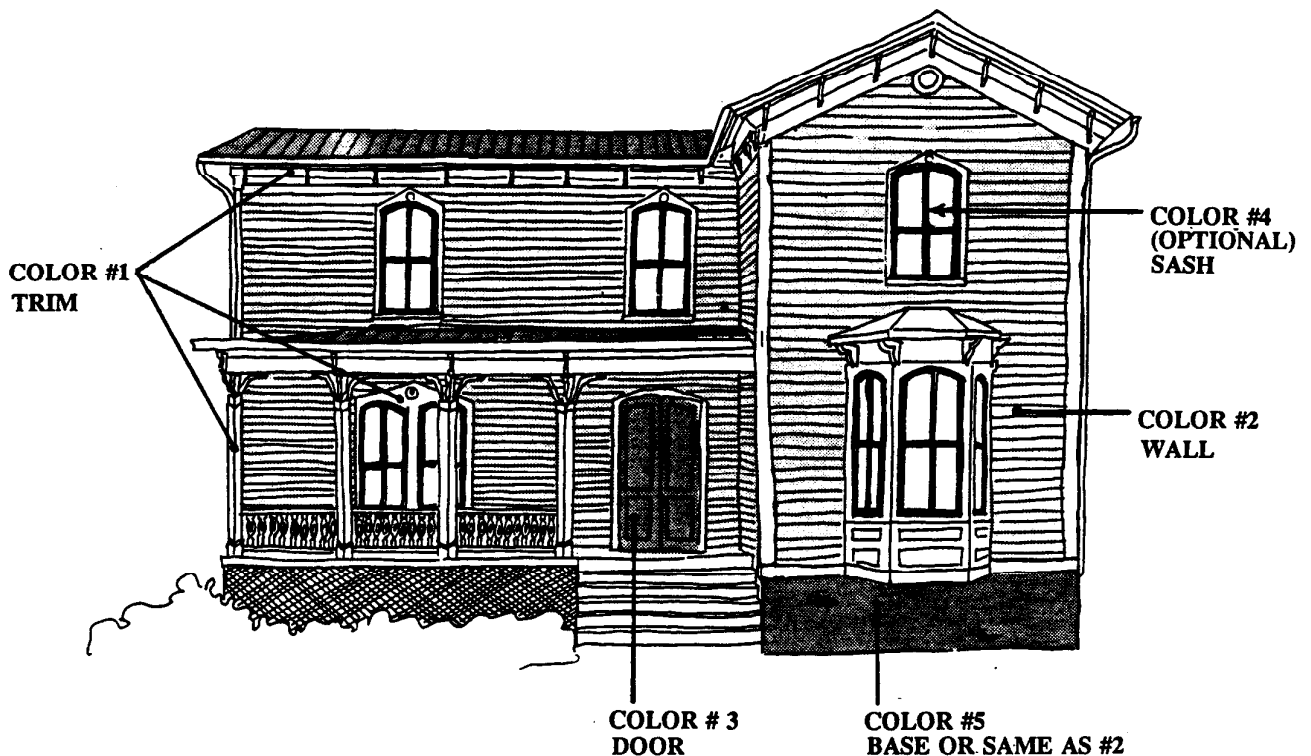
- Using the gentlest means possible remove loose and peeling paint down to the next layer of sound paint using hand scraping and hand sanding (wood and masonry) and a wire brush (metal). A heat gun can be used on wood for heavy build up of paint where there is alligating and blistering.
- Insure that all surfaces are free of dirt, grease

and grime before painting.

- Prime surfaces if bare wood is exposed or if changing types of paints such as from oil to latex.
- Generally, use oil-based paints on wood and metals and latex paints on masonry. In all cases use high quality paint and follow manufacturer's specifications for preparation and application.

Not Recommended

- Do not use sandblasting or high pressure water wash to remove paint from masonry, soft metal, or wood.
- Do not apply latex paints directly over oil-based paints as it either will not bond or will pull the old oil-based paint off of the painted surface.



COLOR SELECTION AND PLACEMENT

Recommended

- Colors should be selected to complement the style and period of the house.
- Colors should blend with and complement the overall color schemes existing on the same street. Bright and obtrusive colors should be avoided.
- Elements of the building should be painted correctly. Trim including horizontal and vertical trim boards, porch framing and columns, and window framing should be painted the same color. The wall, whether masonry or frame should be a contrasting color. In the case of Victorian style houses, the sash can be painted a darker color. Doors and shutters should also be painted a darker color than the walls and trim.
- The numbers of colors should be limited and details such as brackets on Queen Anne houses should not be painted with an additional accent color.

- Color palettes for different styles can be as follows:

Federal and Greek Revival: Brick should remain brick color and trim should be white. Frame buildings were generally painted white (with green shutters) to emulate white marble of Greek and Roman buildings.

Gothic Revival and Italianate: Colors should be pale earth tones, such as light browns, tans, pinks, grays. Trim, however, should be accented with a different color. More ornate Italianate buildings can be painted with richer earth tones.

Second Empire and Queen Anne: Deep, rich colors such as greens, rusts, reds, and browns can be used on the exterior trim and walls of late Victorian houses. Keep in mind that some darker colors may chalk and fade

quickly. The important objective is to respect the many textures of these highly ornate structures. Shingles can be treated with a different color from the siding on the same building.

Again, it is best to treat similar elements with the same color to achieve a unified and not an overly busy and disjointed appearance.

Colonial Revival:

Softer colors were used on these buildings and trim was usually painted white or ivory since the style was a return to classical motifs.

Square Hipped and Frame Vernacular:

These buildings are generally very simple designs with plain detailing. One color should be used for the trim and a contrasting color for the wall.

REFERENCES

The following publications contain more detailed information about painting and color selection. See the Bibliography for their complete citation.

PRESERVATION BRIEF #10 - EXTERIOR PAINT PROBLEMS ON HISTORIC WOODWORK

CENTURY OF COLOR - EXTERIOR DECORATION FOR AMERICAN BUILDINGS 1820-1920

RESPECTFUL REHABILITATION - ANSWERS TO YOUR QUESTIONS ABOUT OLD BUILDINGS